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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,530	07/18/2000	Loa Andersson	2204/A21	8680

34845 7590 05/17/2004

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EXAMINER

DUONG, FRANK

ART UNIT PAPER NUMBER

2666

DATE MAILED: 05/17/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/618,530

Applicant(s)

ANDERSSON ET AL.

Examiner

Frank Duong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 March 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-24 and 26-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-24, 26-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Office Action is a response to the amendment dated 3/4/4. Claims 1, 3-24 and 26-49 are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3-24 and 26-49 are rejected under 35 U.S.C. 102(e) as being anticipated by Goyal et al (USP 6,466,985) (hereinafter "Goyal").

Regarding **claim 1**, in accordance with Goyal reference entirety, Goyal discloses a method for establishing a label switched path by a first label switching device (108-112) to a second label switching device (108-112) in a communication network without using an explicit signaling protocol (*col. 4, lines 43-45 or col. 9, line 65*) (FIGs. 1-4), the method comprising:

allocating a new label for the label switched path (*FIG. 3; block 304 and col. 7, lines 48-49 and col. 10, lines 14-19*);

generating a labeled packet including the new label (*FIG. 3; block 306 and col. 7, lines 49-50*), including inserting the new label into the packet (*inherent in MPLS*

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network) and setting an indicator (*setting direction indicator in the first bit of the flow label*) in the packet to indicate that the packet is labeled (*col. 7, lines 53-64*); and

forwarding the labeled packet to the second label switching device (*FIG. 3; block 308 and col. 7, lines 50-52*).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales discussed above), Goyal further discloses wherein the indicator is an ethertype field (first bit of the flow label) of the packet, and wherein setting the indicator in the packet to indicate that the packet is labeled comprising setting the ethertype field to a predetermined value (1 or 0) (*col. 7, lines 53-64*).

Regarding **claim 4**, in addition to features recited in base claim 1 (see rationales discussed above), Goyal further discloses wherein the indicator (first bit of the flow label) is a bit in a header field of the packet, and wherein setting the indicator in the packet to indicate that the packet is labeled comprising setting the bit to a predetermined value (1 or 0) (*col. 7, lines 53-64*).

Regarding **claim 5**, in addition to features recited in base claim 1 (see rationales discussed above), Goyal further discloses adding a forwarding table entry to a forwarding table (*see FIG. 2; block 208 and col. 8, lines 9-10 and lines 27-29*), the forwarding table entry mapping the new label to a forwarding equivalence class and outgoing interface for the label switched path (*inherent in MPLS network or col. 8, lines 29-31*).

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Regarding **claim 6**, in addition to features recited in base claim 5 (see rationales discussed above), Goyal further discloses wherein the forwarding table is associated with the outgoing interface for the label switched path (see *col. 8, lines 29-31*).

Regarding **claim 7**, in addition to features recited in base claim 1 (see rationales discussed above), Goyal further discloses terminating (*virtual termination of many tunnels*) use of the label switched path (*col. 6, lines 1-9*); and forwarding unlabeled packets to the second label switching device (*col. 6, lines 1-9; end node (not shown). It is inherent to received unlabeled packet at the end node in the MPLS network*).

Regarding **claim 8**, in addition to features recited in base claim 7 (see rationales discussed above), Goyal further discloses removing a forwarding table entry from a forwarding table (*col. 9, lines 65-67; "use it or loose it"*), the forwarding table entry mapping the new label to a forwarding equivalence class and outgoing interface for the label switched path (see *col. 10, lines 14-49*).

Regarding **claim 9**, in accordance with Goyal reference entirety, Goyal discloses a label switching device (*FIG. 2 and col. 6, line 53 to col. 7, line 44*) comprising:

an outgoing interface (212) providing an interface for communicating with a second label switching device (*FIG. 1; 108-112*); and

packet processing logic (202) operably coupled to allocated a new label for a new label switched path to the second label switching device and to forward a labeled packet including the new label and an indicator indicating that the labeled packet is labeled (*setting direction indicator in the first bit of the flow label*) (*col. 7, lines 53-64*), to the second label switching device over the outgoing interface (see *FIGs 3-4 and col. 7,*

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line 45 to col. 10, line 49) without first explicitly establishing the new label switched path to the second label switching device using a signaling protocol (*col. 9, line 65*).

Regarding **claim 10**, in addition to features recited in base claim 10 (see rationales discussed above), Goyal further discloses wherein the packet processing logic (202) comprises:

label switching logic (202) operably coupled to decide to established the new label switched path (*col. 7, lines 45-64*);

label allocation logic (202) operably coupled to allocated the new label for the new label switched path (*col. 7, lines 45-64*); and

packet labeling logic (202) operably coupled to inserted new label in the packet and set an indicator in the packet (first bit of the flow label) to indicate that the packet is labeled (*col. 7, lines 45-64*).

Regarding **claim 11**, in addition to features recited in base claim 10 (see rationales discussed above), Goyal further discloses wherein the indicator is an ethertype field of the packet (first bit of the flow label), and wherein the packet labeling logic is operably coupled to set the bit to a predetermined value (1 or 0) to indicate that the packet is labeled (*see col. 7, lines 53-64*).

Regarding **claim 12**, in addition to features recited in base claim 10 (see rationales discussed above), Goyal further discloses wherein the indicator is a bit in a header field of the packet (first bit of the flow label), and wherein the packet labeling logic is operably coupled to set the bit to a predetermined value (1 or 0) to indicate that the packet is labeled (*see col. 7, lines 53-64*).

Regarding **claim 13**, in addition to features recited in base claim 9 (see rationales discussed above), Goyal further discloses a forwarding table (208) associated with the outgoing interface (*col. 8, lines 29-30*).

Regarding **claim 14**, in addition to features recited in base claim 13 (see rationales discussed above), Goyal further discloses wherein the packet processing logic further comprises label switched path setup logic (202) operably coupled to added a forwarding table entry (*col. 8, lines 9-10*) to the forwarding table (208), the forwarding table entry mapping the new label to a forwarding equivalence class and the outgoing interface for the label switched path (*inherent in MPLS network or col. 8, lines 29-31*).

Regarding **claim 15**, in addition to features recited in base claim 9 (see rationales discussed above), Goyal further discloses wherein the packet processing logic (202) is operably coupled to forward unlabeled packet to the second label switching device over the outgoing interface upon deciding to stop using the label switched path (*col. 6, lines 1-9; end node (not shown). It is inherent to received unlabeled packet at the end node in the MPLS network*).

Regarding **claim 16**, in addition to features recited in base claim 9 (see rationales discussed above), Goyal further discloses wherein the packet processing logic (202) is operably coupled to remove a forwarding table entry form a forwarding table associated with the outgoing interface (*inherent or "use it or loose it" at col. 9, line 66*), the forwarding table entry mapping the new label to a forwarding equivalence class and the outgoing interface for the label switched path (*inherent in MPLS network or col. 8, lines 29-31*).

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Regarding **claims 17-23**, the claims call for a computer program of claims 9-16. Thus, the same rationales applied in the rejection of claims 9-16 are applied because router 200 of FIG. 2 is a software-driven router.

Regarding **claim 24**, in accordance with Goyal reference entirety, Goyal discloses a method for establishing a label switched path to a first label switching device in a communication network (FIGs. 1-4) without using an explicit signaling protocol (col. 9, line 65), the method (*col. 7, line 45 to col. 10, line 49*) comprising:

receiving a labeled packet including a new label and an indicator indicating that the labeled packet is labeled (*setting direction indicator in the first bit of the flow label*) (*col. 7, lines 53-64*) from a second label switching device (FIG. 4; block 402 and col. 8, lines 1-2); and

setting the label switched path using the new label (*FIG. 4; blocks 404-412 and col. 8, lines 2-19*).

Regarding **claim 26**, in addition to feature recited in base claim 24 (see rationales discussed above), Goyal further discloses wherein the indicator is an ethertype field of the packet, and wherein the ethertype field (first bit of the flow label) is set to a predetermined value (1 or 0) to indicate that the packet is labeled (flow direction).

Regarding **claim 27**, in addition to feature recited in base claim 25 (see rationales discussed above), Goyal further discloses wherein the indicator is a bit in a header field of the packet, and wherein the bit is set to a predetermined value to indicate that the packet is labeled (flow direction) (*col. 7, lines 53-64*).

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Regarding **claim 28**, in addition to feature recited in base claim 24 (see rationales discussed above), Goyal further discloses wherein setting up the label switched path using the new label comprises:

determining a forwarding equivalence class and outgoing interface for the packet based upon network layer addressing information in the packet (col. 8, lines 10-11); and

adding a forwarding table entry to a forwarding table (208) (col. 8, lines 9-10), the forwarding table entry mapping the new label to the forwarding equivalence class and outgoing interface for the packet (*inherent in MPLS network or col. 8, lines 29-31*).

Regarding **claim 29**, in addition to feature recited in base claim 26 (see rationales discussed above), Goyal further discloses forwarding the packet based upon the network layer addressing information in the packet (*see col. 7, line 14; routing table or IPv4 or IPv6 is supported in routing by Goyal invention as discussed in Goyal reference*).

Regarding **claim 30**, in accordance with Goyal reference entirety, Goyal discloses a label switching device (*FIG. 2 and col. 6, line 53 to col. 7, line 44*) comprising:

an incoming interface (212) providing an interface for communicating with a second label switching device (*FIG. 1; 108-112*); and

packet processing logic (202) operably coupled to received a labeled packet including a new label for a new label from the second label switching device over the incoming interface without first explicitly establishing the new label switched path from the second label switching device to the first label switching device using a signaling

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protocol (*col. 9, line 65*) and to set up the switched path using the new label (*see FIGs 3-4 and col. 7, line 45 to col. 10, line 49*).

Regarding **claim 31**, in addition to features recited in base claim 30 (see rationales discussed above), Goyal further discloses wherein the packet processing logic (202) comprises:

label detection logic (202) operably coupled to determine that the received packet is labeled (*col. 7, lines 45-64*);

label switching logic (202) responsive to the label detection logic and operably coupled to determine that the labeled packet is not associated with an existing label switched path (*col. 7, lines 45-64*); and

label switched path set up logic (202) responsive to the label switching logic and operably coupled to set up the label switched path using the new label (*col. 7, lines 45-64*).

Regarding **claim 32**, in addition to features recited in base claim 31 (see rationales discussed above), Goyal further discloses wherein the labeled packet includes the new label and an indicator indicates that the packet is labeled (*see col. 7, lines 53-64*) and wherein the label detection logic is operably coupled to determine that the received packet is labeled based upon the indicator (*col. 7, lines 45-64*).

Regarding **claim 33**, in addition to features recited in base claim 32 (see rationales discussed above), Goyal further discloses wherein the indicator is an ethernet field of the packet (first bit of the flow label), and wherein the ethernet field is

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set to a predetermined value (1 or 0) to indicate that the packet is labeled (see col. 7, lines 53-64).

Regarding **claim 34**, in addition to features recited in base claim 32 (see rationales discussed above), Goyal further discloses wherein the indicator is a bit in a header field of the packet (first bit of the flow label), and wherein the bit is set to a predetermined value (1 or 0) to indicate that the packet is labeled (see col. 7, lines 53-64).

Regarding **claim 35**, in addition to features recited in base claim 31 (see rationales discussed above), Goyal further discloses wherein the label switched path setup logic (202) is operably coupled to determine a forwarding equivalence class and outgoing interface for the packet based upon network layer addressing information in the packet (col. 8, lines 1-8 and thereafter) and add a forwarding table entry to a forwarding table (col. 8, lines 9-10), the forwarding table entry mapping the new label to the forwarding equivalence class and outgoing interface for the packet (col. 8, lines 10-19 and thereafter).

Regarding **claim 36**, in addition to features recited in base claim 31 (see rationales discussed above), Goyal further discloses routing logic (202) responsive to the label switched path setup logic and operably coupled to forward the packet based upon the network layer addressing information in the packet (col. 7, lines 10-19 or col. 10, line 60).

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Regarding **claims 37-43**, the claims call for a computer program of claims 30-36. Thus, the same rationales applied in the rejection of claims 30-36 are applied because router 200 of FIG. 2 is a software-driven router.

Regarding **claim 44**, in accordance with Goyal reference entirety, Goyal discloses an MPLS network (col. 4, lines 52-59) comprising LSRs (108-112) use a packet-driven mechanism (202) to established a label switched path (col. 7, line 1 to col. 11, line 5) without first explicitly establishing the label switched path using a signaling protocol (*col. 9, line 65*), and wherein the first label switching device (any one of 108-112) is operably coupled to allocate a new label for the label switched path and to forward a labeled packet including the new label and an indicator for indicating the labeled packet is labeled, to the second label switching device over the communication network upon deciding to establish a new label switched path to the second label switching device (*see FIGs 3-4 and col. 7, line 45 to col. 10, line 49*).

Regarding **claims 45-46**, see col. 7, line 1 to col. 11 and the rationales discussed above.

Regarding **claims 47-49**, in accordance with Goyal reference entirety, Goyal discloses a communication message comprising a new label for a label switched path to be established (col. 7, lines 48-49) and a label indicator indicating that the protocol message is labeled (col. 7, lines 49-50), wherein the label indicator comprises a field having a predetermined value (*0 or 1*) for indicating that the protocol message is labeled (*col. 7, lines 53-63*).

Response to Arguments

3. Applicant's arguments filed 3/4/4 have been fully considered but they are not persuasive. Applicants' arguments will be addressed hereinbelow in the order in which they appear in the response filed 3/4/4.

In the Remarks of the outstanding response, on page 3, pertaining the Examiner's interpretation of Goyal's "indicator", Applicants argue *"Applicant's disagree with the Examiner's interpretation of the above text as supporting the element 'setting an indicator in the packet to indicate that the packet is labeled...' The 'indicator' cited in Goyal merely indicates the direction of the flow associated with the label, with a 0 being one direction, and a 1 being another direction. Such a teaching neither describe nor suggests that the 'indicator' is used to identify the packet as being labeled, as recited in the claims. Rather, Goyal states ... including claims 1, 9, 17, 24, 30, 37 and 44"*.

In response Examiner respectfully disagrees and asserts the Goyal's "indicator" is corresponding the claimed "indicator". In a conventional packet switching network, a packet is labeled or encapsulated with a *"packet header"* for layers processing. The conventional packet switching network has evolved to expedite the packet header processing to reduce latency having devices processing packet header at layer 2, layer 3, layer 4 or multiple layers. Multiprotocol Label Switching network is one of the result of such evolution using MPLS having a label pushed on the stack of the entry and popped off on exit of the MPLS network. In other words, by MPLS standard, the label is added at the entry of the MPLS network and removed at the exit of the MPLS network. Adding a label to a packet can literally interpret as the claimed *'setting an indicator in*

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the packet to indicate that the packet is labeled'. However, Goyal has deviated from the norm to further disclose a sender, in Goyal's MPLS network, uses a label to define a flow name as well as direction using a leading. Examiner understands Applicants' are their own lexicographer. Meaning they can call or define whatever term they desired as long as they are well received in the technological community. However, contradistinction to the Applicants' argument, limitation asserted being novel and distinctive from the norm, according to the Applicants' arguments, is still read on by the Goyal's description.

Examiner believes an earnest attempt has been made in addressing all of the Applicants' arguments. Due to the arguments are not persuasive and the amendment does not present the application in a better condition for allowance, the rejection from the last Office Action is maintained.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is (703) 308-5428. The examiner can normally be reached on 7:00AM-3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Frank Duong
Examiner
Art Unit 2666

May 5, 2004